

REMARKS

Claims 1-16 are pending. Claims 1, 7 and 11 have been amended. No new matter has been presented.

Applicant thanks the Examiner for conducting an interview on May 11, 2006. During the interview, claims 1 and 11 were discussed. Applicant explained that according to claim 1, the voltages applied to read out the charges from the pixels are maintained during the summation process, whereas in Udagawa, the read-out voltage stops being applied after the pixel is read out (before the summation process). The Examiner indicated that he would reconsider the rejection upon the filing of a formal response.

Claims 1, 3, 4 and 7 are rejected under 35 USC 103(a) as being unpatentable over Udagawa, U.S. Patent 5,880,781, in view of Kobayashi, U.S. Patent 6,750,911. This rejection is respectfully traversed.

Applicant again attaches, for reference purposes only, Figs. 1 and 2. Attached Fig. 1 explains what is shown in Figs. 2A-2D of Udagawa. Attached Fig. 2 explains the claimed invention.

Referring to attached Fig. 1, Fig. 2A shows the state of potentials of the vertical transfer path prior to charge readout. Next, in Fig. 2B, high-voltage readout pulses 1a and 1b are applied to gates V1 and V3 so that M1, C1, C3 and G3 alone are read out and transferred to a V-CCD. In Fig. 2C, after the readout pulse stops, another high-voltage pulse is applied to the substrate and Y2, G2, Y3 and M3 carriers are discharged to the substrate. These carriers are not read out at this time because they are not needed. In Fig. 2D, a positive voltage is applied to the gates V2 so that summation of the signal charges is enabled. Thus, although it is true that Udagawa performs pixel summation, this process is different than the claimed method because Udagawa does not maintain the voltages applied to read out the charges from the pixels during the summation process. As can be seen in attached Fig. 1, the pulse VH is only on during the time of Fig. 2B, i.e., the time during the initial read out of pixels M1, C1, G3, C3. However, according to claim 1, the readout voltage is

maintained during the summation. This is evident in attached Fig. 2, where readout pulses are applied to V3A and V3B in state B so that R0-R10 are read out to a vertical transfer path. Next, in state C, the charge readout pulse applied to V3B is stopped. However, the charge readout pulse to V3A continues so that the so-called read-out state is maintained as represented by broken lines 2. Then, as represented by broken lines 1, pixels are transferred and their charges are summed in the follows states from C to I. Thus, the features of claim 1 are not taught or suggested by Udagawa.

Claim 7 recites the same features recited in claim 1 and is allowable for the same reasons claim 1 is allowable. The remaining claims are allowable at least due to their respective dependencies. Applicant requests that this rejection be withdrawn.

Claims 5 and 6 are rejected under 35 USC 103(a) as being unpatentable over Udagawa in view of Kobayashi and further in view of Hattori, U.S. Patent Publication 20050012826. This rejection is respectfully traversed.

Claims 5 and 6 are allowable at least due to their respective dependencies and the fact that Hattori fails to overcome the deficiencies of Udagawa and Kobayashi. Applicant requests that this rejection be withdrawn.

Claims 2 and 8 are rejected under 35 USC 103(a) as being unpatentable over Udagawa in view of Kobayashi and further in view of Yu, U.S. Patent 6,034,366. This rejection is respectfully traversed.

Claims 2 and 8 are allowable at least due to their respective dependencies and the fact that Yu fails to overcome the deficiencies of Udagawa and Kobayashi. Applicant requests that this rejection be withdrawn.

Claims 11, 9, 10, 12 and 16 are rejected under 35 USC 103(a) as being unpatentable over Kobayashi in view of Udagawa. This rejection is respectfully traversed.

Claim 11 has been amended to recite that the preliminary measurements are measurements taken prior to the main shooting. The prior art of record fails to teach or suggest the features of claim 11. The remaining claims are allowable at least due to their respective dependencies. Applicant requests that this rejection be withdrawn.

Claim 13 is rejected under 35 USC 103(a) as being unpatentable over Kobayashi in view of Udagawa in view of Yamada, U.S. Patent 5,995,137, and further in view of Misawa, U.S. Patent Publication 20010048477. This rejection is respectfully traversed.

Claim 13 is allowable at least due to its dependency and the fact that Yamada and Misawa fail to overcome the deficiencies of Udagawa and Kobayashi. Applicant requests that this rejection be withdrawn.

Claim 14 is rejected under 35 USC 103(a) as being unpatentable over Kobayashi, in view of Udagawa in view of Yoshida, U.S. Patent 6,809,763, and further in view of Watanabe, U.S. Patent 5,420,629. This rejection is respectfully traversed.

Claim 14 is allowable at least due to its dependency and the fact that Yoshida and Watanabe fail to overcome the deficiencies of Udagawa and Kobayashi. Applicant requests that this rejection be withdrawn.

Claim 15 is rejected under 35 USC 103(a) as being unpatentable over Kobayashi in view of Udagawa, in view of Tanaka, U.S. Patent 6,559,889. This rejection is respectfully traversed.


Wa in view of Tanaka, U.S. Patent No. 6,559,889. This rejection is respectfully traversed.

Claim 15 is allowable at least due to its dependency and the fact that Tanak fails to overcome the deficiencies of Udagawa and Kobayashi. Applicant requests that this rejection be withdrawn.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing docket no. 524642000500.

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Respectfully submitted,

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Attachment: Example Figs. 1 and 2